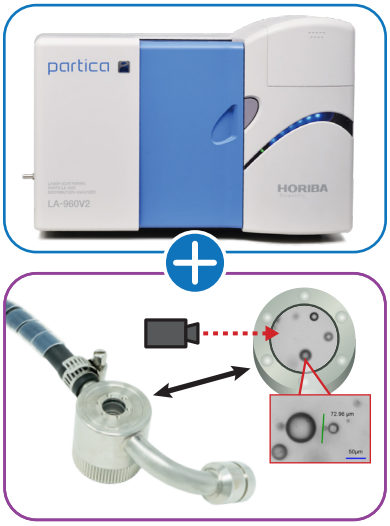
HORIBA

Laser Light Scattering
Dynamic Light Scattering
Image Analysis
Nanoparticle Tracking

Your
Partner
in Science

The Particle Characterization Line-up



The **Partica LA-960V2** is a laser diffraction particle size distribution analyzer that is known for its wide dynamic range, speed, excellent performance assurance, and outstanding quality. Its method expert software makes it easy to create a robust, powerful method for research and development purposes as well as quality control. The flexible sample handling, robust platform, and wide size range ensure the LA-960V2 will handle the most extreme demands.

The **LY-9610** Imaging Unit accessory is a small, integrated unit that fits neatly inside the Partica LA-960V2 without increasing the instrument footprint. Using dynamic image analysis, it allows the user to observe the particles in real time as they circulate through the Partica LA-960V2 wet system. Visualizing the particles as the sample is running creates a better understanding of the dispersions used and illuminates image-based shape and size information to complement your laser diffraction results.

The compact **Partica LA-350** laser diffraction analyzer is your routine analysis tool. It can achieve high performance with easy operation and maintenance, excelling at applications as diverse as slurries, minerals, and paper chemistry. It is the ideal combination of performance, price, and packaging to streamline particle size analysis.

The **ViewSizer™ 3000** implements breakthrough improvements to particle tracking technology that includes proprietary illumination and detection methods allowing cutting-edge visualization, measurement and number concentration of nanoparticles over a wide range of sizes. The system has unmatched capabilities for characterizing polydisperse assemblages of particles in liquids and can easily resolve separate size modes in complex samples.

The **nanoPartica SZ-100V2** analyzer is the industry's widest range and highest precision measurement instrument for nanoparticle characterization. It determines three parameters that characterize nanoparticles: particle size, zeta potential, and molecular weight. The uniquely designed cells for zeta potential can measure samples with volumes as low as 100 µL. Intuitive software allows you to make dynamic light scattering (DLS) and related measurements.

The **Partica CENTRIFUGE CN-300** applies centrifugal force of up to 30,000g and uses temperature control to produce accurate measurement results for a variety of samples. The key feature of centrifugation is that the particle size is measured following classifying by size, resulting in a very wide range of high-precision measurements.

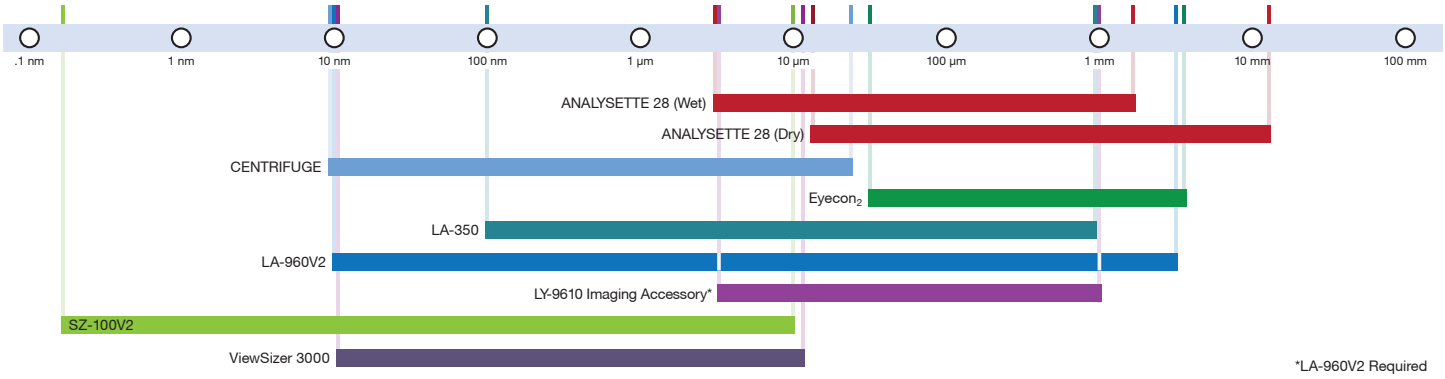
Instrument	Technology	Measurement Output	Measurement Range	Typical Sample Amount*	Light Source/ Other
LA-960V2	Laser Diffraction	Particle Size	Wet: 10 nm to 3000 µm Dry: 100 nm to 5000 µm	~10 mg to 5 g	650 nm Laser Diode 405 nm LED
⊕ LY-9610	Dynamic Image Analysis (Requires an LA-960V2)	Particle Size and Shape	Wet: 5 µm to 1000 µm *5 µm for size and 9 µm for shape as ISO 13322-2	~10 mg to 5 g	LED Light
LA-350	Laser Diffraction	Particle Size	Wet: 0.1 µm to 1000 µm	~10 mg to 5 g	650 nm Laser Diode
ViewSizer 3000	Nanoparticle Tracking Analysis**	Particle Size Particle Concentration	10 nm to 15 µm	350 µL to 3 mL	445 nm blue laser 520 nm green laser, 635 nm red laser with variable power output
SZ-100V2	Dynamic Light Scattering (DLS), Electrophoretic Static Light Scattering, Debye Plot Method	Particle Size, Zeta Potential, Molecular Weight	Particle Size: 0.3 nm to 10 µm Zeta Potential: -500 mV to +500 mV Molecular Weight: $1x10^3$ to $2x10^7$ g/mol	10 µL to 3 mL	532 nm Laser Diode (green) 17°, 90°, 173° detectors
CENTRIFUGE CN-300	Centrifugal Sedimentation	Particle Size	10 nm to 40 µm	10 µm (Line Start) 40 µm (Homogenous)	LED 470 nm (500 mW) Max acceleration: 30,000 G
SA-9650 Series	BET Flowing Gas Adsorption & Desorption	Surface Area	0.1 m^2 to 50 m^2	< 1 g	NA
Eyecon$_2$	Direct Imaging Particle Analysis	Particle Size and Shape	50 µm to 5500 µm	Continuous monitoring	12 x 3 High intensity, low energy RGB LEDs
ANALYSETTE 28	Dynamic Image Analysis	Particle Size and Shape	Dry: 20 µm to 20 mm Wet: 5 µm to 3 mm	Dry: 10 to 100 g Wet: 0.1 to 1 g	LED 2.59 microns per pixel

** Amount is sample dependent.* *** Fluorescence nanoparticle tracking also available.*

The **SA-9650 Series** of surface area analyzers provides convenience, remarkable measurement speed, and very low cost-per-analysis for a wide variety of materials. With the push of a button, perform extremely fast single point or multi-point surface area measurements using the robust flowing gas technique to acquire gas adsorption and desorption data. This information is then used to calculate total surface area utilizing the BET method.

The **Eyecon$_2$™** is the number one choice for in-line or at-line digital image analysis. It uses a flash-imaging technique, which emits extremely short light-pulses with Red, Green, and Blue LEDs to illuminate moving particles from multiple angles for image capture. Each particle is then identified, a best-fit ellipse is calculated, the major & minor diameters are computed, and the PSD/D-values are determined.

The **ANALYSETTE 28 ImageSizer** is the ideal analyzer for applications that require accurate and reproducible results for both particle shape and size of powders and bulk solids, as well as of suspensions and emulsions. The optical process of dynamic image analysis provides results for a wide measuring range, delivers multiple shape parameters and evaluation possibilities for particle size.



HORIBA Particle Size Analysis Guidebook

HORIBA offers instruments for particle size, particle shape, zeta potential, molecular weight, and surface area analysis. A range of analytical techniques are employed including laser diffraction (Mie Theory), dynamic light scattering, nanoparticle tracking analysis (NTA) and dynamic and static image analysis (for determining both particle size and shape information).

These instruments can incorporate small volume pumping systems for precious materials, high throughput automation, dry powder dispersers, and temperature controlled flow systems in order to provide the user with the best possible solution with none of the trade-offs that might otherwise be necessary.

For more information on particle size theory and measuring techniques, visit: www.horiba.com/particle and download the Particle Size Analysis Guidebook

HORIBA's experienced staff of technical and applications specialists are in 54 offices across 45 countries. We are committed to the satisfaction of our users and to the education of the greater industry and provide many channels of support including:

- Sample analysis via the many Applications Labs around the world.
- No cost webinars, technical notes, and much more at www.horiba.com/particle
- Instant support via phone, e-mail, or online meeting.
- On-site user training courses (contact the number or email below for more information).
- Service contracts, verifications, and validations to fit every requirement.
- Advanced software tools to correlate data from other particle size analyzers to maintain historic specifications.

⚠ Please read the operation manual before using any of these products to ensure safe and proper operation.

www.horiba.com/particle • email: labinfo@horiba.com

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